DOCUMENT RESUME

ED 301 616 UD 026 522

AUTHOR Rossell, Christine H.; Clarke, Ruth C.
TITLE The Carrot or the Stick for School Desegregation Policy?
PUB DATE 8 Apr 88
NOTE 39p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 8, 1988). For complete study, see ED 279 781.
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Desegregation Effects; *Desegregation Methods; Elementary Secondary Education; *Magnet Schools; Migration; Population Trends; Racial Balance; *Racially Balanced Schools; Research Problems; School Demography; *School Desegregation; School Districts; Statistical Analysis; Urban Schools; *Voluntary Desegregation; Whites

ABSTRACT

This study compares the long-term desegregation effectiveness of voluntary plans with magnet schools to mandatory reassignment plans with magnet schools. The introduction includes an extensive discussion of the problems of choosing dependent variables for use in desegregation studies. The potential study population was chosen based on the percentage of the minority groups in the school district population, and whether the desegregation plan used a magnet-voluntary or a magnet-mandatory structure. Twenty school districts were chosen for study from that population. The following characteristics were examined: (1) decrease of the white population (white flight); (2) interracial exposure; (3) racial imbalance; and (4) net balance. The analysis suggests that a magnet school plan based primarily on voluntary transfers will produce greater long-term interracial exposure than a mandatory reassignment plan with magnet components. This is probably due to greater white flight from the mandatory plans. Thus, adding magnet schools to a mandatory reassignment plan does not make it competitive with a voluntary plan. Twenty-two notes, and a list of 38 references are included. Six graphs and six tables of statistical data are included in the appendices. (FMW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED301616

THE CARROT OR THE STICK FOR SCHOOL DESEGREGATION POLICY?

Christine H. Rossell

and

Ruth C. Clarke

Boston University

A paper presented at the annual meeting
of the American Educational Research Association,
New Orleans, LA, April 8, 1988.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Christine Rossell
Boston University
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

UD 026522

BEST COPY AVAILABLE

THE CARROT OR THE STICK FOR SCHOOL DESEGREGATION POLICY?

Abstract

This study compares the desegregation effectiveness of voluntary plans with magnet schools to mandatory reassignment plans with magnet schools in a sample of 20 school districts. The analysis suggests that a magnet school plan based primarily on voluntary transfers will produce greater long-term interracial exposure than a mandatory reassignment plan with magnet components. This is probably due to the greater white flight from the mandatory plans. Thus adding magnet schools to a mandatory reassignment plan does not make it competitive with a voluntary plan.

THE CARROT OR THE STICK FOR SCHOOL DESEGREGATION POLICY?

Introduction

The effectiveness of voluntary plans as desegregation tools has been a hotly debated issue during three decades of school desegregation litigation. The general conclusion, even in the most recent writings, is that voluntary plans do not work (Rossell, 1978a; Orfield, 1978; Rossell, 1979; Royster, et al, 1979; Rossell & Hawley, 1983; Orfield, 1988). A recent review of the research by Hawley and Smylie (1986), for example, citing studies published through 1983 concludes that "Wishful thinking to the contrary and occasional anecdotes notwithstanding, wholly voluntary strategies are only partially successful in reducing racial isolation...those based primarily on voluntary strategies...have limited impact on levels of racial isolation throughout the system, particularly in districts with substantial proportions of minority students." Similarly, the Fifth Circuit Court of Appeals recently concluded that a voluntary plan with magnets proposed for the Hattiesburg, Mississippi school district "did not meet the constitutional test for dismantling a long established dual system. Magnet schools should be a supplement to a mandatory desegregation plan based to a reasonable extent on mandatory reassignment and pairing and clustering of schools" (p. 10-11) and that "burdening black parents with the obligation of choosing schools is unworkable in fact and contrary to the law" (ft. 10) (U.S. v. Pittman et al. v. the State of Mississippi and Hattiesburg Municipal Separate School District, No. 85-4804, Jan. 12, 1987).

This study provides the most recent evidence on this question. We compare the desegregation effectiveness of voluntary plans with magnet schools (magnet-voluntary) to that of mandatory plans with magnet schools (magnet-mandatory) in a sample of 20 school districts, 18 of which were originally studied by Abt Associates

(Royster et al., 1979; Rossell, 1979). This study differs from previous research on this subject in three ways. First, we are the first to compare the long term impact of voluntary and mandatory plans. Two previous studies, Rossell (1979) and Royster, et al. (1979), concluded that magnet-mandatory plans produce more desegregation than magnet-voluntary plans, but each of these studies was limited by having only one year of post-implementation data on average. Yet, it is often the case that the long term impact of a policy is very different from the short term impact (see, for example, Salamon, 1979).

Second, even the most recent studies comparing the relative effectiveness of magnet-voluntary plans with magnet-mandatory plans, have used dependent variables we believe to be inadequate. The Lowry and Associates study (Blank, et al., 1983), for example, used a qualitative measure that precluded their making any contribution to the policy debate on the effectiveness of magnet school plans as desegregation tools. Rather than using any of the precise mathematical measures of desegregation used by academics, the federal government, and the courts, they constructed an index of desegregation success from the sum of interviewer ratings from 0 to 100 of four factors in a sample of three schools in each district. Moreover, only one of the four factors measured student desegregation,[1] and thus the study is of little use in assessing the desegregation success of magnet schools.

A more common inadequate dependent variable is a standardized measure of racial balance, such as the index of dissimilarity.[2] The formula is

$$D = 1/2 \sum \left| \frac{Wi}{W} - \frac{Bi}{B} \right|$$

where W is the number of whites, or any other ethnic or racial group, and B is the number of blacks or any other ethnic or racial group. The index of dissimilarity represents the proportion (or percentage if multiplied by 100) of black students who

would have to be reassigned to white schools, if no whites are reassigned, in order to have the same proportion in each school as in the whole school district.[3] The index ranges from 0 (perfect racial balance -- that is, no black students need to be reassigned) to 100 (perfect racial imbalance -- that is, 100 percent of the black students need to be reassigned, if no whites are reassigned, in order to have perfect racial balance).

Another way of measuring the contact between the races is as interracial exposure -- specifically, the proportion white in the average minority child's school.[4] The measure is calculated as follows:

$$Smw = \frac{\sum_k NkmPkw}{\sum_k Nkm}$$

where k stands for each individual school and thus Nkm is the number (N) of minorities (m) in a particular school (k) and Pkw is the proportion (P) white (w) in the same school (k). Hence, the number of minorities in each school is multiplied by the proportion white in the same school. This is summed for all schools and divided by the number of minorities in the school system to produce a weighted average--the proportion white in the average minority child's school. Since the proportion white in the average minority child's school increases with racial balance reassignments, but goes down as the white enrollment decreases, it yields the interracial exposure, or net benefit, of desegregation reassignments.

Racial balance, by contrast is an inadequate goal because it ignores white reactions to desegregation that influence how many whites are coming into contact with minorities. This is as true of the precise racial balance measures, such as the index of dissimilarity, as it is of the more imprecise racial balance standards used

by the courts such as the requirement that all schools be within plus or minus 15 or 20 percentage points of the district's racial proportions.

The index of dissimilarity, or any other measure of racial balance, is thus less comprehensive than the index of interracial exposure because interracial exposure includes racial balance, but racial balance does not include interracial exposure. Racial balance can be achieved with very little interracial exposure, but interracial exposure cannot be achieved without significant racial balance. If whites and minorities are evenly distributed among schools, there will be more interracial exposure, that is, a higher percentage white in the average minority child's school, than if each race goes to separate schools. Interracial exposure is also, however, a function of the proportions of whites and minorities in the school system -- the level of interracial exposure for the average minority child can be no higher than the proportion white in the school system.[5]

This becomes clearer if we consider a hypothetical segregated school system with six schools and the racial composition shown below.

	Minorities	Whites
	100	0
	100	0
	100	0
	0	100
	0	100
	0	100
Sum	300	300
% of Total	50.0	50.0

Virtually all supporters of school desegregation would prefer a plan which produced outcome A (shown below) with considerable racial balance and 245 white students remaining to a plan which produced outcome B (shown below) with perfect racial balance but only 6 white students remaining.

	OUTCOME A		OUTCOME B	
	Minorities	Whites	Minorities	Whites
	50	20	50	1
	50	45	50	1
	50	40	50	1
	50	50	50	1
	50	45	50	1
	50	45	50	1
Sum	300	245	300	6
% of Total	55.0	45.0	98.1	1.9

Although outcome B has only one white in each school, it has a racial imbalance score of 0, that is perfect racial balance, and all schools within plus or minus 15 or 20 percentage points of the school district's proportions (98 percent minority and 2 percent white). We find, however, only 2 percent white in the average minority child's school. Outcome B thus has perfect racial balance, but very little interracial exposure.

Outcome A, by contrast, has an index of dissimilarity of 8.8 -- that is, it is more racially imbalanced than outcome B. It also has one school (17 percent of the total number of schools) racially imbalanced by the plus or minus 15 or 20 percentage point criterion whereas outcome B had none racially imbalanced by that standard. Nevertheless, outcome A has 44.2 percent white in the average minority child's school. Thus, if we have racial balance as our goal, we would be forced to choose the intuitively least desirable plan, that in which there was only one white in each school. If we have interracial exposure as our goal, however, we would choose the intuitively most desirable plan, the one with 44.2 percent white in the average minority child's school.

The inadequacy of racial balance measures thus stem from the fact that they hold changing demographics constant. Because white flight is a function of the

characteristics of a school desegregation plan (see Rossell, 1983; Welch and Light, 1987; Rossell, 1988), using interracial exposure as a dependent variable enables us to specify plan characteristics which will minimize the costs and maximize the benefits of desegregation. Unfortunately, most studies, including the recently released U.S. Commission on Civil Rights Study by Welch and Light (1986), have used racial balance as a dependent variable because it is easier to use -- one does not have to control for the pre-desegregation percentage white as is necessary with interracial exposure.[6] Welch and Light's conclusion that mandatory plans produce more racial balance, but also more white flight than voluntary plans tells us little that we do not already know.[7] The most important question not addressed in that and similar reports is what is the net benefit of these two countervailing tendencies -- racial balance transfers and white flight? Interracial exposure, unlike racial balance, measures this net benefit.

Measuring the outcome of a school desegregation plan as interracial exposure rather than racial balance is also supported by the social science research which shows the educational and social benefits of desegregation to be derived from the percentage white in the average minority child's school rather than the uniform distribution of the races. Mahard and Crain's (1983) comprehensive meta-analysis of school desegregation and educational achievement, indicates that, although the relationship is not perfectly linear, the greater the percentage white in the average minority child's school, the greater the achievement gains of black children. Although there is disagreement over the size of this effect, we know of no other review or research which has found another variable besides percentage white to be the "cause" of the positive effects of school desegregation.[8]

The research also shows a similar influence of percentage white on life chances. For example, a recent review conducted by Braddock, Crain, and

McPartland (1984) cites ten major studies which assess the social outcomes for minority adults of having had a desegregated education. All but two of these studies had as their causal variable the percentage white in the minority child's school rather than racial balance. The higher the percentage white in the average minority child's school, the greater the social benefits. They found that black students from majority white high schools were more likely to enroll at majority white four year colleges, to have white social contacts, to have white friends, to live in integrated neighborhoods, and to have positive relationships with white co-workers.

The two studies reviewed by Braddock, Crain, and McPartland (1984) that did not have the percentage white as their independent variable were analyses of the effect of school desegregation on residential integration. Change in school district racial balance was the independent variable and change in residential racial balance was the dependent variable. The school district with the greatest reduction in residential racial imbalance was the school district with no mandatory reassignment of white students -- Riverside (Pearce, 1980). Other studies have suggested that whatever residential integration occurs with school desegregation comes from minority parents moving into the neighborhood of their child's new school rather than whites following their children into minority neighborhoods (Greenwood, 1972; Foushee and Hamilton, 1977; Kentucky Commission on Human Rights, 1975, 1980a, 1980b).

All of these studies suggest that producing the greatest interracial exposure for minority children ultimately produces the greatest improvement in their life chances. Thus, the most important factor in assessing school desegregation plans is the interracial exposure they produce, not their racial balance.

Classifying Plans into Magnet-Voluntary and Magnet-Mandatory

There are essentially two types of desegregation plans using magnet schools: magnet-voluntary and magnet-mandatory (see Rossell, 1979). A magnet-voluntary plan is one in which desegregation is primarily accomplished through voluntary transfers. It is typically characterized by voluntary white transfers to magnet schools placed in minority neighborhoods and voluntary minority transfers to white schools which may or may not be magnet schools. If the white school is not a magnet, the transfer is called a majority-to-minority transfer.[9] Most magnet-voluntary plans include some redrawing of contiguous attendance zones, particularly at the secondary level, to increase desegregation.

A magnet-mandatory plan, on the other hand, is one in which desegregation is primarily accomplished through mandatory assignment of students to other-race schools. In such plans, the magnet schools are educational options whose purpose is to reduce conflict and increase parental satisfaction. While participation in the desegregation plan is not voluntary (as in the magnet-voluntary plans), participation in the magnet school portion typically is.

In a magnet-mandatory plan the magnet schools are usually quite successful in achieving racial balance because the alternative is mandatory assignment to a less desirable desegregated school not of one's choice. Boston, for example, initially had long waiting lists for its magnet schools despite considerable white flight from the non-magnet schools. In the magnet-voluntary situation, by contrast, some schools will simply fail to attract students because the alternative is more desirable -- to continue to attend one's neighborhood school.

Appendix 1 lists the school districts in this sample, the year of desegregation, and the extent of magnet school participation. The districts are grouped according to whether their plan is primarily voluntary (Buffalo through Tacoma) or primarily

mandatory (Boston through Tulsa) and whether the predesegregation minority was above or below 30 percent. It should be emphasized that the magnet-voluntary plans analyzed in this study are comprehensive. Fifty-five percent of the school districts with voluntary plans were ordered to desegregate by a court after a finding of intentional segregation. All have the goal of desegregating the entire school district, and all but two (San Bernardino and Cincinnati) have explicit and ambitious desegregation goals. The average number of magnet schools in these districts is 28 comprising 1/3 of the schools and enrolling 1/3 of the students in the district. Thus, these school systems are qualitatively and quantitatively different from districts with one or two magnet programs and no overall goal of achieving or maintaining a racially balanced school system.

None of the voluntary desegregation plans in this sample are entirely voluntary -- all use some additional, minimal, mandatory techniques such as selected school closings and contiguous rezoning, particularly at the secondary level. Nevertheless, none of the voluntary plans analyzed here have an explicit mandatory back-up, although presumably those ordered by a court have an implicit mandatory backup.[10]

Similarly, none of the mandatory desegregation plans are entirely mandatory. Some have used magnet programs to desegregate schools which have become resegregated through white flight, deliberately avoiding additional mandatory reassignments. Others, such as Boston, placed magnet programs in schools which they felt could not be desegregated by mandatory means due to extreme white resistance,[11] as well as in other schools around the city in order to reduce white flight and resistance.

As this brief discussion suggests, although the school districts have been classified into two exclusive categories for analytical purposes -- mandatory and voluntary -- it may be more accurate to describe the mandatory-voluntary dimension

in terms of a continuum. Because of this and because these plans have changed somewhat over time, there will always be some disagreement as to exactly how to classify them.[12]

Characteristics of the Sample

Although there are only nine comprehensive magnet-voluntary school desegregation plans in this sample, they represent 2/3 of the school districts with such plans in the 119 school district sample (see Rossell and Clarke, 1987) from which the 20 district sub-sample is drawn. The sample includes all of the school districts in the Abt Associates study (Royster, et al., 1979) plus San Bernardino and Cincinnati. Originally, Abt Associates chose their sample on a random basis after first stratifying the potential population of school districts along two major dimensions: percentage minority in the school district population and whether the desegregation plan utilized a magnet-voluntary or a magnet-mandatory structure. The latter was verified by telephone. School districts were selected randomly from among the sites in each category.

The resulting sample of 20 school districts is quite varied in terms of most population characteristics, ranging from the huge predominantly minority Houston school district to the tiny predominantly white Montclair school district. Table 1 shows the average school district and community characteristics for voluntary and mandatory plans and the correlation (r) between "voluntary plan" (a dummy variable) and each of these characteristics. Mandatory desegregation plans are in communities[13] that predesegregation were smaller in population and percentage minority, and higher in income and education than those in which voluntary plans were implemented. In other words, in this sample the districts with voluntary plans are at a small, but insignificant, predesegregation disadvantage with regard to social

characteristics in comparison to the mandatory plans. The districts with voluntary plans also had less predesegregation interracial exposure, but more racial balance than those with mandatory plans. The only significant difference between the two types of plans is that districts with voluntary plans experienced significantly greater white enrollment decline four years before the implementation of their magnet school plan.

White Flight

Of all forms of white response to school desegregation, white flight is probably the most important because it directly affects interracial exposure. Although the issue of white flight from mandatory desegregation plans has been a hotly debated one since Coleman et al.'s 1975 paper charging that mandatory desegregation plans were counterproductive (see Rossell, 1978c), surprisingly few studies have specifically compared voluntary and mandatory plans.

As with the original Abt sample, the school districts within the categories "voluntary" and "mandatory" are classified into those above and below 30 percent minority predesegregation. School districts above that point are thought to have significantly greater long-term white flight that is detrimental to interracial exposure (Coleman, 1977; Rossell, 1978a:31; Armor, 1980; Farley, Wurdock, and Richards, 1980; Ross, Gratton, and Clarke, 1982; Smylie, 1983). Moreover, because interracial exposure is limited by the predesegregation percentage white, dividing the districts into those above and below 30 percent minority predesegregation makes the voluntary and mandatory plans more comparable for the purposes of an interrupted time series. Ultimately we drop this division when we analyze interracial exposure in a pooled cross-sectional analysis with the predesegregation percentage minority as one of the control variables.

Table 2 compares the average percentage white enrollment change[14] for voluntary and mandatory desegregation plans in school districts above and below 30 percent minority. Figure 1 illustrates these data for school districts above 30 percent minority and Figure 2 illustrates the data for school districts below 30 percent minority. The year of desegregation is indicated by the heading T+0.[15] Each year before desegregation is indicated by T-1, T-2, T-3 and each year after the implementation year of the major desegregation plan is indicated by T+1, T+2 . . . T+9.[16] Because all of the school districts in this sample have magnet schools as a component of their plan, the analysis presented here is a test of the effect of voluntary versus mandatory reassignment of white students. Put another way, we are testing whether placing magnet programs within a mandatory plan will make these plans comparable to voluntary plans with magnet schools in terms of white flight.

These data indicate that, in school districts above 30 percent minority, the mandatory desegregation plans with magnet schools produce greater white enrollment loss than the voluntary plans with magnet schools, not only in the implementation year (T+0), but in subsequent years. This is despite the fact that predesegregation the districts with mandatory plans had less white enrollment decline. The pattern for school districts less than 30 percent minority shown in Figure 2 is different predesegregation but similar postdesegregation. The districts with mandatory plans have, on average, more predesegregation white enrollment loss than those with mandatory plans. Nevertheless, the gap between the two increases dramatically with the implementation of desegregation to the advantage of the voluntary plans.[17] It is only in the 8th year of desegregation that the two trend lines cross and remain essentially the same for the next three years.

Hence, there is a difference between the two groups of school districts--those above and those below 30 percent minority. In the school districts below 30 percent minority, the white enrollment change trend lines of the voluntary and mandatory plans eventually cross around the eighth year, although the mandatory plans never recover the much greater white enrollment loss they incur in the previous years, contrary to Farley, Wurdock & Richards (1980) and Wilson (1985), but similar to Welch (1987). In the school districts above 30 percent minority, however, the voluntary plans have less white enrollment loss than the mandatory plans during the entire time period of this study.

The total white enrollment loss from the year before desegregation (T-1) to the tenth year of desegregation (T+9) is 36 percent for all voluntary plans, and 47 percent for all mandatory plans. The total white enrollment loss (T-1 to T+9) for districts greater than 30 percent minority is -37 percent for those with voluntary plans and -55 percent for those with mandatory plans. This is a significant difference between the two. The total white enrollment loss (T-1 to T+9) for districts less than 30 percent minority, by contrast, shows a much smaller disparity between mandatory and voluntary plans--34 percent for those with voluntary plans and 41 percent for those with mandatory plans. In short, districts with mandatory plans, although they include magnet schools, incur more white enrollment decline with desegregation than districts with voluntary plans.

Interracial Exposure

Although these data are interesting, they are an insufficient criterion for selecting alternative desegregation plans. Considering only the costs of school desegregation plans is not only constitutionally unacceptable, but senseless from a policy analytical perspective. If one were to consider only white flight costs, the

desegregation alternative chosen would always be "do nothing" since that always produces the least white flight. Therefore, from both a constitutional and a policy analytical standard, one must consider both the costs and benefits of desegregation reassignments.

As discussed above, the measure which does this is interracial exposure -- the percentage white in the average minority child's school. Table 3 compares the interracial exposure of voluntary and mandatory desegregation plans in school districts above and below 30 percent minority.[18] Figure 3 shows interracial exposure in school districts above 30 percent minority and Figure 4, in school districts less than 30 percent minority. Although they had a lower predesegregation percentage white, the school districts with voluntary plans nevertheless had more predesegregation interracial exposure than those with mandatory plans, within the two categories of percentage minority.

As Figure 3 illustrates, in school districts above 30 percent minority, the magnet-voluntary plans produce a significant increase in interracial exposure in the implementation year, but both the increase and the absolute level of exposure is greater for the mandatory plans. By the fourth year of desegregation (T+3), however, the trend lines meet. By the fifth year (T+4), the districts with voluntary plans surpass the mandatory plans and the gap continues to increase. Although all school districts have decreasing interracial exposure after the implementation year, the trend line of the mandatory plans is much more negative than that of the districts with voluntary plans.

There is a similar pattern for school districts less than 30 percent minority shown in Figure 4. Again, the school districts with voluntary plans had greater predesegregation interracial exposure than those with mandatory plans, but both had a large increase with the implementation of their desegregation plans. The districts

with voluntary plans surpass the mandatory plans by the third year of desegregation (T+2) in these school districts and as with the school districts above 30 percent minority, the gap between the two types of plans increases over time. Therefore, regardless of whether a school district is above or below 30 percent minority, the mandatory plans do better in the implementation year and for a few years after, but the districts with voluntary plans surpass them within two to four years and the disparity continues to grow. Ultimately, the voluntary plans produce more interracial exposure.

Racial Imbalance

Not only do the districts with voluntary plans produce more interracial exposure, but as Table 4 and Figures 5 and 6 indicate, they also produce similar levels of racial imbalance. Although the districts with mandatory plans consistently do better than the districts with voluntary plans in achieving racial balance, the difference between them is fairly small beginning around the third year of desegregation for school districts less than 30 percent minority and around the fourth or fifth year of desegregation for school districts above 30 percent minority. They both produce an average level of racial imbalance between 30 and 35 somewhere between the fourth and sixth year of desegregation -- a level which indicates systemwide desegregation, but allows for court approved deviations. In short, even by the traditional, limited criterion of racial balance, the voluntary plans ultimately do at least as well as the mandatory plans.

Net Benefit

In Table 5, we present a pooled cross-sectional time series analysis of the extent of interracial exposure produced by desegregation[19] controlling for whether a

plan is voluntary, the predesegregation percentage white, interracial exposure and white enrollment change, as well as total enrollment, the year of the plan, the city or county educational level, the time period (0,1,2,3...9) and an interaction effect, time period times voluntary. For our purposes, this is a test of the effect on interracial exposure of a voluntary plan controlling for demographic variables which might also effect interracial exposure. This equation shows that voluntary desegregation plans produce significantly more interracial exposure over time than mandatory desegregation plans controlling for possible confounding factors. The b coefficient for the main effects and the interaction effects can only be interpreted by solving the equation for those variables. This equation tells us that a voluntary plan at T+9, holding all other variables constant, would be expected to have a level of interracial exposure 5.4 percentage points above that of a mandatory plan.

In addition, interracial exposure is positively related, as would be expected, to the predesegregation percentage white, predesegregation percentage white enrollment change, and the year the desegregation plan was implemented. Postimplementation interracial exposure is negatively related to predesegregation interracial exposure (although not significantly), total district enrollment, and the city or county educational level. Moreover, all of these relationships conform to logic. This equation explains almost 91 percent of the variance in postimplementation interracial exposure and is quite robust. The coefficients change little when the data are analyzed without the predesegregation adjustments to Montclair and Houston,[20] when the entire postimplementation time period is analyzed, with its attendant missing data,[21] and when Buffalo's postdesegregation interracial exposure is fixed at the 1980 (pre-mandatory reassignments) level.[22]

Conclusions

The analysis presented here, consisting of 2/3 of the comprehensive magnet-voluntary desegregation plans in our 119 school district sample, suggests that a magnet school plan based primarily on voluntary transfers will produce greater long-term interracial exposure than a mandatory reassignment plan with magnet components. This is probably due to the greater white flight from the mandatory plans. Thus adding magnet schools to a mandatory reassignment plan does not make it competitive with a voluntary plan. Mandatory desegregation plans with magnet schools produce a large implementation year reduction in racial isolation and then begin to resegregate shortly thereafter. The implementation year superiority of the mandatory plans, however, is the primary reason why Rossell (1979) and Royster, et al. (1979) concluded that mandatory plans produce greater interracial exposure. Magnet-voluntary plans, by contrast, typically start off more slowly, but continue to reduce racial isolation by a few percentage points a year. Around the third or fourth year of desegregation, the two trend lines cross and the magnet-voluntary plans produce greater interracial exposure over time than the mandatory plans, all other things being equal. This appears to be true regardless of whether a school district is greater than or less than 30 percent minority and regardless of the extent of predesegregation interracial exposure.

The voluntary school desegregation plans may also have had a positive impact on the characteristics of the communities in which they were implemented. Although the communities with voluntary plans were larger and had a higher percentage minority and lower educational and income level predesegregation, by 1980 the differences between the two groups had diminished due to a greater increase in median income and educational level in the school districts with voluntary plans. It must be stressed, however, that in our sample none of the

mandatory plans could by any stretch of the imagination be called "failures." Every school district in our sample with a mandatory desegregation plan has more interracial exposure in the tenth year of desegregation than if no plan at all had been implemented.

Although the finding that primarily voluntary plans produce more interracial exposure over time than mandatory plans contradicts several decades of school desegregation research, it cannot be emphasized enough that the voluntary plans analyzed in this report are qualitatively different from the old Southern freedom of choice plans or Northern one-way M to M programs. The whites are also different. As white attitudes have changed over time -- currently 93 percent of the white Americans support the principle of school integration -- we would expect voluntary plans to be more successful. Magnet schools provide white parents with an incentive to act in a manner consistent with their support for integration.

NOTES

1. These factors were (1) magnet school desegregation success : 100 = 3 sites fully desegregated (defined as "equal access" and "substantial mix", 0 = none of three sites desegregated; (2) voluntariness: 100 = 3 sites' students are there by parent preference, 0 = none of the sites have students there by parent preference; (3) extent of staff desegregation: 100 = 3 sites' staffs desegregated, 0 = none desegregated, and (4) a quality integration scale composed of interviewer ratings from 0 to 100 of the "vigorousness" of the effort, and "singular role" of magnets.

2. The measure originates with Karl Taeuber and Alma Taeuber, Negroes in Cities (Chicago: Aldine, 1965). It has been used in numerous studies of school and residential racial imbalance since then. Some examples are Farley, 1981; Farley, Wurdock, and Richards, 1980; Van Valey, Roof, and Wilcox, 1977, Welch and Light, 1986.

3. It is also the sum of 1) the proportion of black students who need to be reassigned to white schools and 2) the proportion of white students who need to be reassigned to black schools, in order to have the same proportion as in the whole school district. The specific proportions of each group adding up to the index are a function of racial proportions and prior segregation.

4. This measure has been used in several more recent studies of school desegregation to assess desegregation nationally (Farley, 1981; Orfield, 1982; Orfield and Monfort, 1986) and to estimate the outcomes of alternative desegregation plans (Ross, 1983; Rossell, 1978a, 1978b; Rossell, 1979; Rossell, 1985).

5. It is possible, however, to have a higher percentage white in the average Hispanic or Asian or black child's school than exists in the school district.

6. An example of how not to use interracial exposure can be seen in Orfield (1988: 28). Here he lists for 24 "cities" the percentage white (incorrectly labeled the percentage of whites) in the school of the typical black student in 1980 and whether there was a mandatory busing plan. There is no control for the predesegregation percentage white. The "cities" with a high percentage white in the average black child's school tend to be those with mandatory plans. They are also largely countywide, southern school districts which predesegregation were about 80-90 percent white. The cities with a low percentage white in the average black child's school are, with one exception, large cities which predesegregation were about 30-45 percent white. Needless to say, this is an incomplete and misleading "analysis."

7. Surprisingly, the average difference in reduction in racial imbalance between "major-voluntary" plans and the mandatory plans is only 6 percentage points for the entire desegregation time period (Welch and Light, 1986: 69). This is a far cry from the early 60's in the South when mandatory plans reduced racial imbalance by 20 to 50 points more than voluntary plans.

8. Of course, this does not mean that other factors, such as cooperative learning, cannot produce positive effects in a desegregated setting if they were implemented. Since they rarely are, and it is difficult to obtain information on such interventions

in any case, the school desegregation evaluations do not control for it.

9. In a majority-to-minority transfer program a student can transfer from any school in which his or her race is in a majority to any school in which his or her race is in a minority. While such programs are open to students of any race, typically only minority students will participate.

10. Buffalo, for example, was ordered to mandatorily reassign 15 percent of its students in 1981 after five years of successful voluntary desegregation.

11. A white enclave, East Boston, was excluded from the mandatory reassignment portion of the plan and only magnet schools were placed there.

12. For example, although this study builds on the 1979 Abt Associates study, we disagree with their classification of three school districts. They classified Dallas, Texas as having a voluntary plan, we classify it as mandatory. They classified Racine, Wisconsin as having a voluntary plan, we classify it as mandatory. They classified Montclair, New Jersey as having a mandatory plan, we classify it as voluntary. For a detailed discussion of the justification for these changes, see Rossell and Clarke, 1987: 28-29.

13. Two of the school districts in this sample (Montgomery County and Jefferson County) are countywide school districts and therefore their population characteristics are for the county, not the city.

14. This is measured as white enrollment in one year minus white enrollment the previous year, divided by white enrollment the previous year and multiplied by 100 to create a percentage.

15. The implementation year for the voluntary plans is the year that the first magnet programs were established. Most of these school districts, however, had already had majority-to-minority transfer programs for several years prior to that. The implementation year for the mandatory desegregation plans is the year of the major plan. If there is a court-ordered plan, it is usually that year. The only exception to this occurs when a significant plan with mandatory white reassignments precedes a court-ordered plan (as in Stockton). Although this rarely happens, the prior plan would be considered the major plan.

16. Data were estimated for all measures for San Bernardino T+8 and T+9, and San Diego and Des Moines T+9 by averaging the change in the last two years for which there were data. For white enrollment change, T-3 data were also estimated for Cincinnati, Portland, and Dallas from the T-2 white enrollment change.

17. This comparison, however, is less reliable than that for school districts above 30 percent minority since there are only two school districts less than 30 percent minority that have voluntary plans -- Portland, Oregon and Tacoma, Washington.

18. Because Houston and Montclair dismantled their mandatory reassignment plans (a very limited one in the case of Houston) and replaced them with voluntary plans, their predesegregation data is adjusted slightly to eliminate the effect of the prior mandatory plans implemented in 1970 in Houston and 1969 and 1971 in Montclair. This small adjustment is necessary because the later voluntary plans did not build

on them, but replaced them. See 3a and 3b of Rossell and Clarke (1987) for the unadjusted and adjusted data.

19. The postimplementation time period is T+0 to T+9 and no missing data is filled in as in the interrupted time series. A pooled, cross-sectional analysis increases the N by treating each year as a separate case.

20. The b coefficient for voluntary is -1.061 and for time x voluntary .947.

21. The b coefficient for voluntary is -3.286 and for time x voluntary .853.

22. In 1981, Buffalo was ordered to pair some black and white schools resulting in 15 percent of the white students being reassigned. With Buffalo's interracial exposure from 1981 on set at the 1980 level, the b coefficient for voluntary is -3.050 and for time x voluntary is .894.

APPENDIX 1

SAMPLE OF SCHOOL DISTRICTS AND
PERCENTAGE OF STUDENTS IN MAGNET SCHOOLS 1982

DISTRICT (IMPLEM. YEAR)	1982 % MIN	YEAR OF DESEG.	# MAGNET SCHOOL	% MAGNET SCHOOLS	% MINOR. IN MAGNETS	% WHITE IN MAGNETS	% ALL STUDENTS IN MAGNETS	AVG. % MINOR. IN MAGNETS
VOLUNTARY								
BUFFALO	54	1976	19	27.2	32.9	31.3	32.2	54.4
CINCINNATI	58	1970	40	51.3	24.2	24.9	24.5	61.1
HOUSTON	78	1975	65	28.0	30.6	37.3	32.1	74.4
MILWAUKEE	58	1976	35	26.9	36.7	46.2	40.7	55.1
MONTCLAIR	48	1977	8	88.9	59.5	65.6	64.5	45.7
PORTLAND	27	1970	13	13.1	33.4	15.0	19.9	50.2
SAN BERNARDINO	52	1978	25	54.3	47.4	37.7	42.7	56.8
SAN DIEGO	50	1977	40	25.5	32.2	21.0	26.6	60.0
TACOMA	26	1968	5	8.2	12.3	5.4	7.2	44.7
MANDATORY								
BOSTON	71	1974	23	19.3	28.9	31.8	29.7	71.4
DALLAS	74	1971	15	8.2	10.9	6.2	9.7	82.5
DAYTON	59	1976	9	21.9	24.7	23.3	24.1	60.2
DES MOINES	18	1977	3	4.9	6.7	2.4	3.1	37.7
LOUISVILLE	30	1975	8	5.7	4.8	5.6	5.4	27.8
MONTGOMERY	26	1976	17	11.4	18.0	5.1	8.4	54.1
RACINE	27	1975	4	11.4	7.5	7.5	7.5	23.5
SPRINGFIELD	52	1974	10	25.0	32.0	19.6	26.1	61.7
ST. PAUL	31	1973	6	9.2	12.2	9.7	10.5	34.9
STOCKTON	68	1975	3	7.7	5.0	4.9	4.9	66.5
TULSA	33	1971	9	9.4	19.9	6.4	10.8	61.2

TABLE 1

AVERAGES AND CORRELATIONS OF PREDESEGREGATION
SCHOOL DISTRICT AND COMMUNITY CHARACTERISTICS
WITH VOLUNTARY AND MANDATORY PLANS

	AVERAGE		VOLUNTARY PLANS
COMMUNITY CHARACTERISTICS	MANDATORY	VOLUNTARY	r
CITY POPULATION	377675	472330	0.16
% WHITE CITY 1970	80.6	78.1	-0.12
INCOME 1970	8178	7320	-0.24
MINORITY INCOME 1970	5406	5477	0.04
EDUCATION 1970	12.2	12.0	-0.19
MINORITY EDUCATION 1970	10.9	10.9	0.02
SCHOOL DISTRICT CHARACTERISTICS			
% WHITE T-2	73.2	64.0	-0.30
ENROLLMENT T-1	74088	82178	0.08
WHITE ENROLLMENT CHANGE T-1	-4.4	-4.3	0.01
WHITE ENROLLMENT CHANGE T-2	-3.0	-4.5	-0.29
WHITE ENROLLMENT CHANGE T-3	-2.8	-3.7	-0.14
WHITE ENROLLMENT CHANGE T-4	-2.7	-5.8 *	-0.47
INTERRACIAL EXPOSURE T-2	44.3	40.8	-0.09
YEAR OF DESEGREGATION PLAN	74	75	0.18
RACIAL IMBALANCE T-2	57.9	52.7	-0.15

* Significant at .05 level.

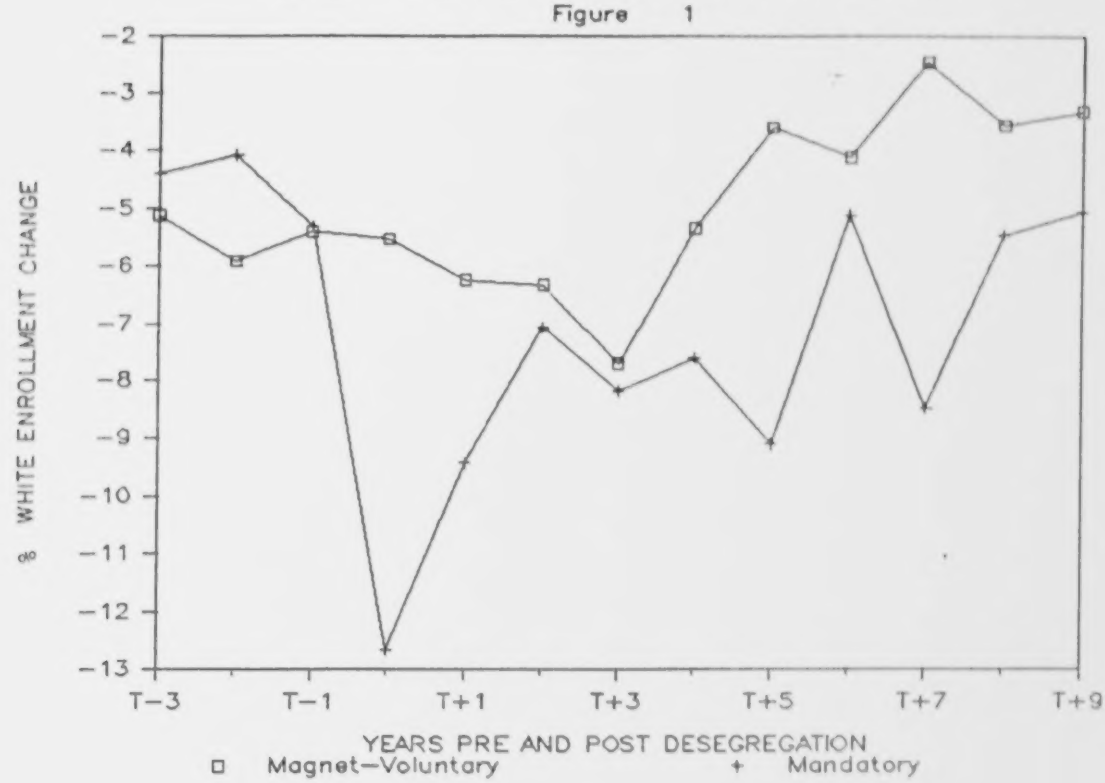
Table 2

% White Enrollment Change
Voluntary and Mandatory Desegregation Plans

	AVER DESEG. YEAR	% WHITE T-1	N	YEARS PRE AND POST MAJOR DESEGREGATION YEAR (DESEG) T-3	T-2	T-1	T+0	T+1	T+2	T+3	T+4	T+5	T+6	T+7	T+8	T+9
>30% MINORITY																
VOLUNTARY	1975	54.9	7	-5.1	-5.9	-5.4	-5.5	-6.2	-6.3	-7.7	-5.3	-3.6	-4.1	-2.5	-3.6	-3.3
MANDATORY	1974	56.5	5	-4.4	-4.1	-5.3	-12.7	-9.4	-7.1	-8.2	-7.6	-9.1	-5.1	-8.5	-5.5	-5.1
<30% MINORITY																
VOLUNTARY	1969	88.6	2	1.5	-1.6	2.0	-1.4	-3.5	-4.1	-4.1	-4.8	-3.2	-4.2	-5.0	-3.8	-4.0
MANDATORY	1975	83.9	6	-1.5	-2.2	-3.7	-6.9	-6.2	-5.4	-5.3	-5.6	-4.4	-6.4	-2.9	-4.7	-3.2

DISTRICTS >30 % MINORITY

Figure 1



DISTRICTS <30 % MINORITY

Figure 2

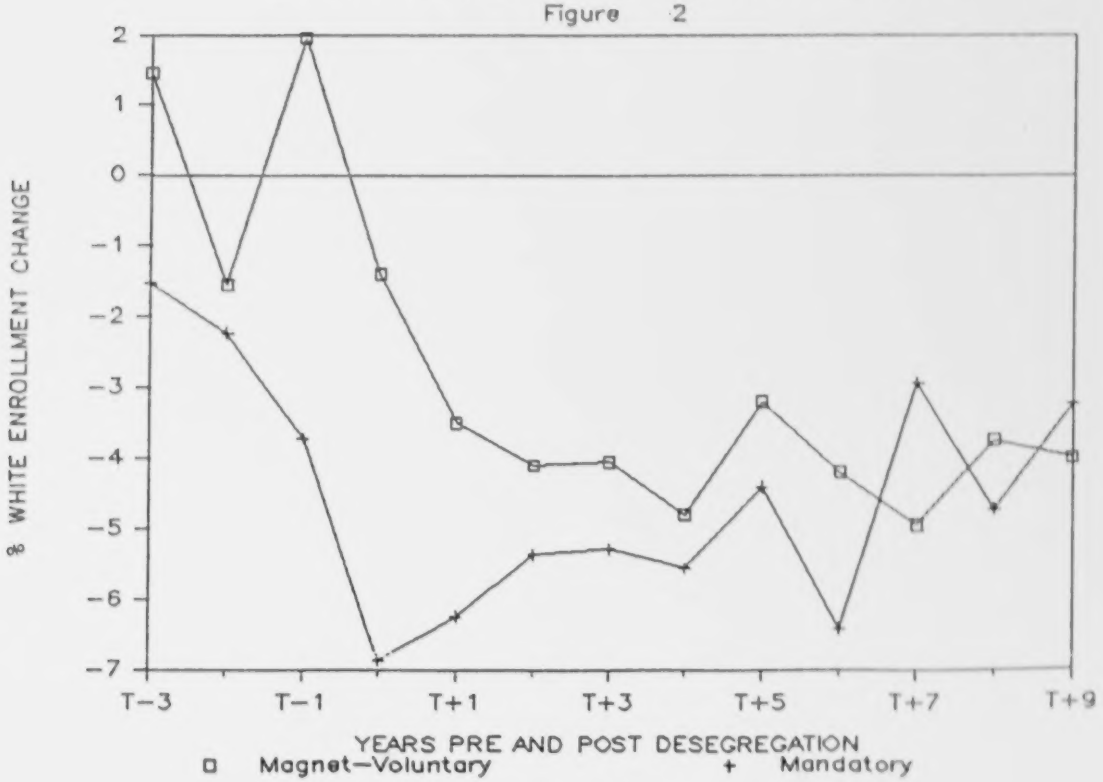


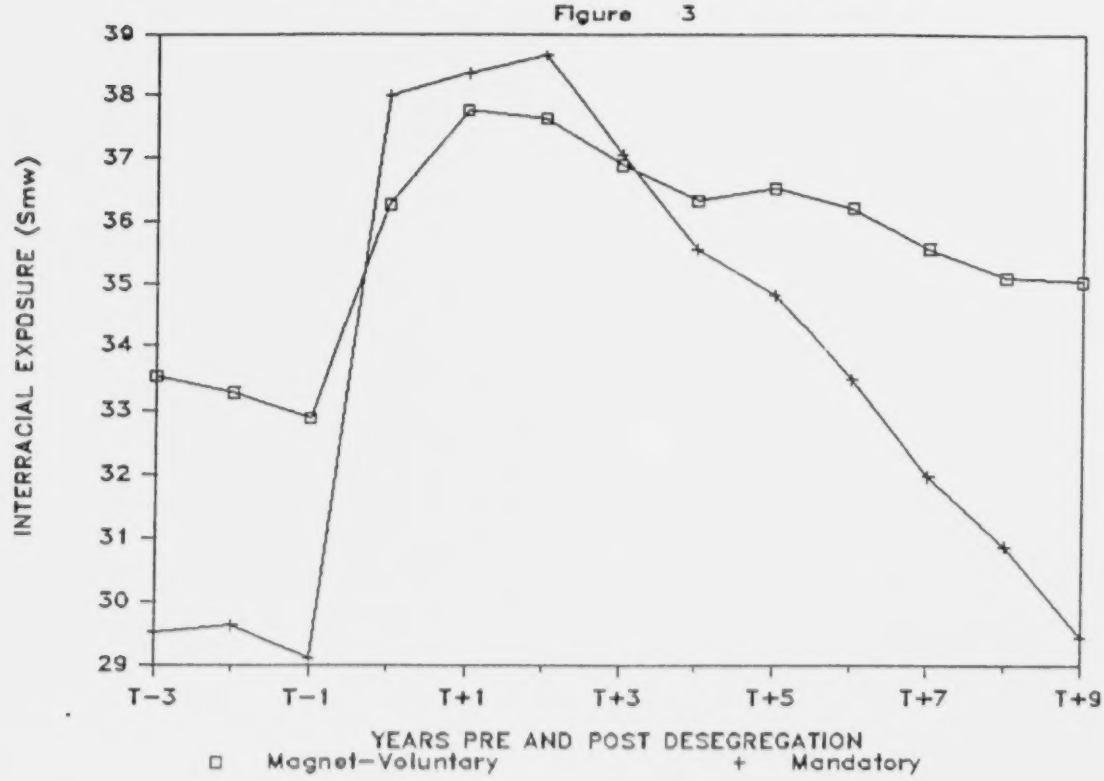
Table 3

INTERRACIAL EXPOSURE (Smw) OF VOLUNTARY AND MANDATORY DESEGREGATION PLANS
WITH HOUSTON AND MONTCLAIR ADJUSTED PREDESEGREGATION

	AVER DESEG. YEAR	% WHITE T-1	N	YEARS PRE AND POST MAJOR DESEGREGATION YEAR												
				T-3	T-2	T-1	DESEG T+0	T+1	T+2	T+3	T+4	T+5	T+6	T+7	T+8	T+9
>30% MINORITY																
VOLUNTARY	1975	54.9	7	33.5	33.2	32.8	36.2	37.7	37.6	36.8	36.3	36.5	36.2	35.5	35.0	35.0
MANDATORY	1974	56.5	5	29.5	29.6	29.1	38.0	38.3	38.6	37.0	35.5	34.8	33.5	32.0	30.8	29.4
<30% MINORITY																
VOLUNTARY	1969	88.6	2	60.8	62.5	62.7	68.1	68.1	72.0	73.2	73.3	73.0	73.5	71.9	71.8	70.6
MANDATORY	1975	83.9	6	55.5	56.6	57.0	69.1	70.3	70.4	68.8	68.7	67.2	66.7	65.0	64.0	63.6

DISTRICTS >30 % MINORITY

Figure 3



DISTRICTS <30 % MINORITY

Figure 4

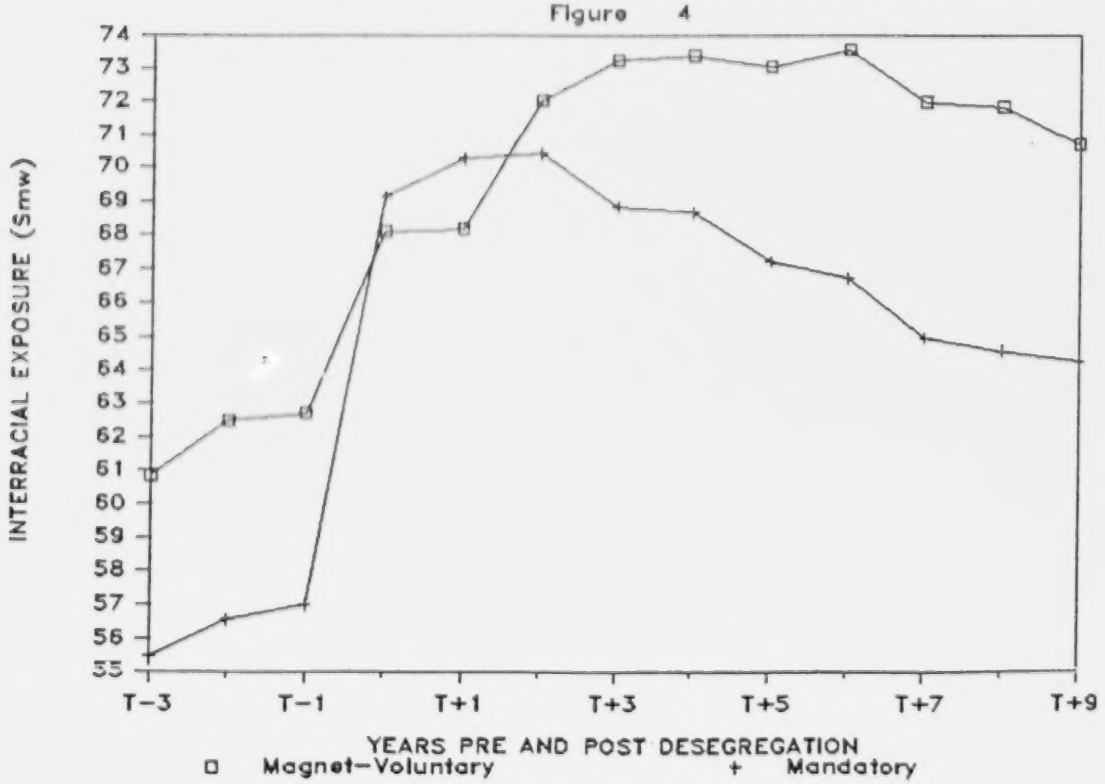


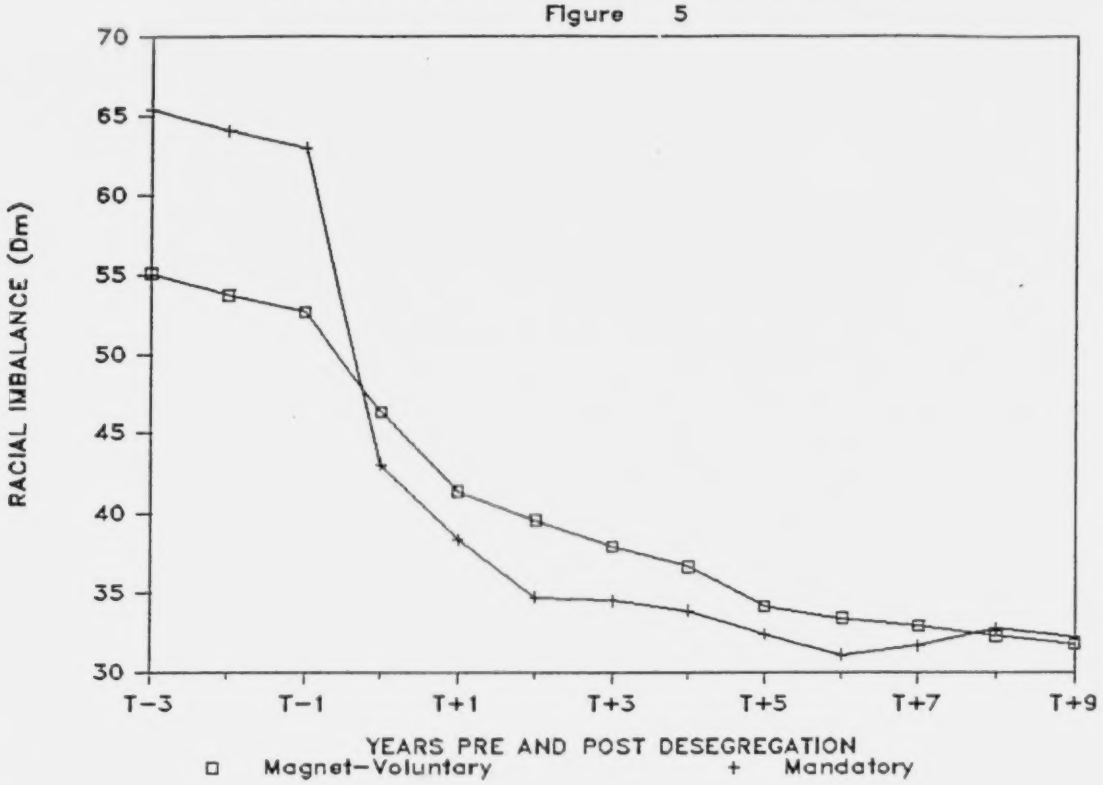
Table 4

RACIAL IMBALANCE (Dm) OF VOLUNTARY AND MANDATORY DESEGREGATION PLANS
WITH HOUSTON AND MONTCLAIR ADJUSTED PREDESGREGRATION

	AVER DESEG. YEAR	% WHITE T-1	N	YEARS PRE AND POST MAJOR DESEGREGATION YEAR: T-3	T-2	T-1	DESEG T+0	T+1	T+2	T+3	T+4	T+5	T+6	T+7	T+8	T+9
>30% MINORITY																
VOLUNTARY	1976	54.9	7	55.1	53.7	52.7	46.3	41.3	39.5	37.9	36.6	34.1	33.3	32.9	32.2	31.7
MANDATORY	1974	55.2	5	65.4	64.0	62.9	43.1	38.3	24.7	34.5	33.9	32.4	31.1	31.7	32.7	32.2
<30% MINORITY																
VOLUNTARY	1969	88.3	2	53.0	53.5	52.3	44.7	42.8	36.3	33.4	33.4	33.7	31.6	30.3	29.2	28.9
MANDATORY	1975	83.9	6	55.1	52.7	50.4	35.5	33.9	33.0	31.9	30.9	30.5	29.5	29.5	28.4	27.1

DISTRICTS >30 % MINORITY

Figure 5



DISTRICTS <30 % MINORITY

Figure 6

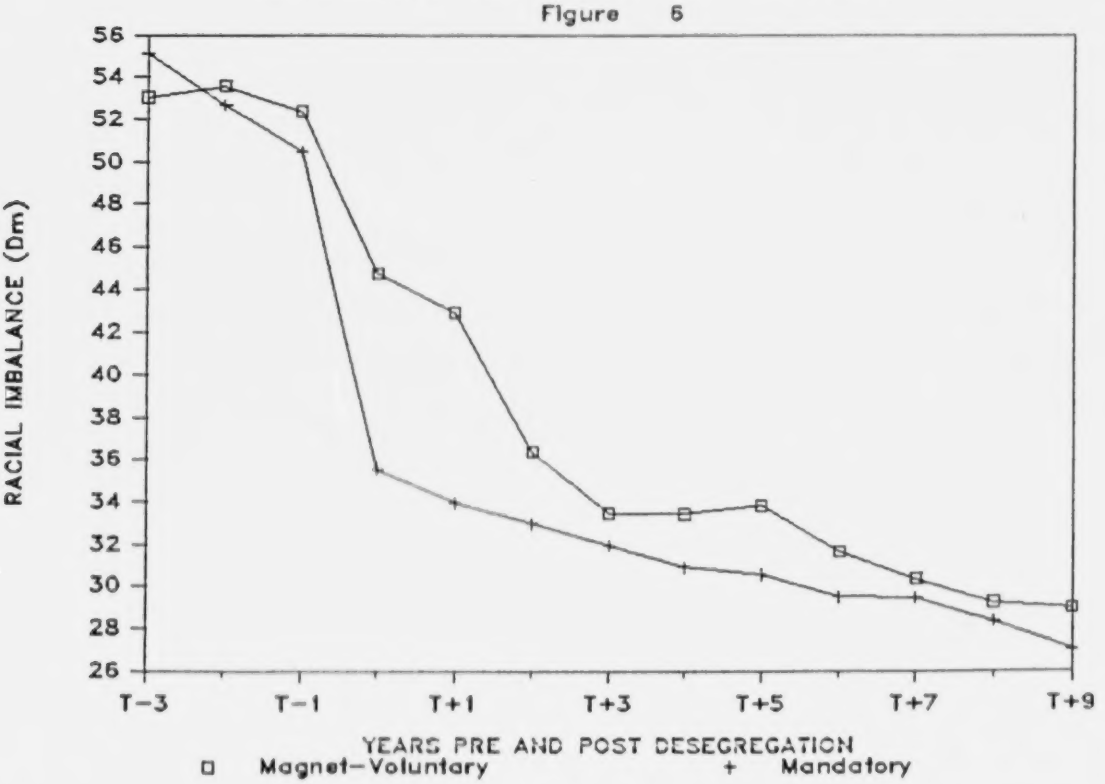


TABLE 5

POSTIMPLEMENTATION INTERRACIAL EXPOSURE (Smw) WITH SCHOOL DISTRICT AND PLAN CHARACTERISTICS

	AVERAGE	r		b		BETA	SE b
SMW POSTIMPLEMENTATION	48.624						
VOLUNTARY	0.441	-0.16		-3.473	**	-0.09	1.673
PERCENTAGE WHITE T-1	68.725	0.88	*	1.092	*	0.89	0.058
SMW T-2	42.369	0.82	*	-0.064		-0.07	0.050
WHITE ENROLLMENT CHANGE T-2	-0.042	0.43	*	165.143	*	0.27	30.389
ENROLLMENT	66105.492	-0.45	*	-8.25e-5	*	-0.20	1.10e-5
YEAR OF PLAN	74.118	-0.04		2.761	*	0.39	0.294
CITY/COUNTY EDUC. 1970	12.550	0.13	**	-0.569	*	-0.15	0.110
TIME	4.390	-0.09		-1.058	*	-0.16	0.204
TIME x VOLUNTARY	1.897	-0.12		0.983	*	0.14	0.311
CONSTANT	-203.36						
r2	0.906						
df	185						

* Significant at .001 level or better.
** Significant at .05 level or better.

REFERENCES

ARMOR, D.J. (1980). White flight and the future of school desegregation. In W.G. Stephan & J.R. Feagan (Eds.) School desegregation: Past, present and future. New York: Plenum Press.

BLANK, R.K. DENTLER, R.A., BLATZELL, D.C., & CHABOTAR, K. (1983, September). Survey of magnet schools: Analyzing a model for quality integrated education. Chicago: James H. Lowry and Associates.

BRADDOCK II, J., CRAIN, R. & McPARTLAND, J. (1984). A long-term view of school desegregation: Some recent studies of graduates as adults. Phi Delta Kappan, December, 259-264.

COLEMAN, J.S. (1977). Population stability and equal rights. Society, 14, 34-36.

COLEMAN, J.S., KELLY, S.D., & MOORE, J.A. (1975). Trends in segregation, 1968-1973. Washington, D.C.: Urban Institute.

CRAIN, R., & STRAUSS, J. (1985). School desegregation and Black occupational attainments: Results from a long-term experiment. Baltimore, MD: Johns Hopkins University, Center for Social Organization of Schools.

FARLEY, R. (1981). Final report, NIE grant #G-79-0151. Ann Arbor: The University of Michigan, Population Studies Center.

FARLEY, R., WURDOCK, C., & RICHARDS, T. (1980). School desegregation and white flight: An investigation of competing models and their discrepant findings. Sociology of Education, 53, 123-139.

FOUSHEE, R., & HAMILTON, D. (1977). Housing desegregation increases as schools desegregate in Jefferson County. Louisville: Kentucky Commission on Human Rights.

GREENWOOD, N. (1972, May 21). School desegregation - successes, failures, surprises. Los Angeles Times.

HAWLEY, W. & SMYLIE, M.A. (1986). The contribution of school desegregation to academic achievement and racial integration. In P. Katz & D. Taylor (Eds.) Eliminating racism: Means and controversies. New York, Pergamon Press.

KENTUCKY COMMISSION ON HUMAN RIGHTS (1975). Six ways to avoid busing. Louisville, Ky.: Kentucky Commission on Human Rights.

KENTUCKY COMMISSION ON HUMAN RIGHTS (1980a). Blacks moving to suburban apartments. Louisville, Ky.: Kentucky Commission on Human Rights.

KENTUCKY COMMISSION ON HUMAN RIGHTS (1980b). Housing and school desegregation increased by Section 8 moves: Under public housing program most black families chose Jefferson County suburbs. Louisville, Ky.: Kentucky Commission on Human Rights.

MAHARD, R.E. & CRAIN, R.L. (1980). The influence of high school racial composition on the academic achievement and college attendance of Hispanics. Paper presented at the annual meeting of the American Sociological Association.

ORFIELD, G. (1978). Must we bus? Segregated schools and national policy. Washington, D.C.: Brookings Institution.

ORFIELD, G. (1982). Desegregation of Black and Hispanic students from 1968 to 1980. Washington, D.C.: Joint Center for Political Studies.

ORFIELD, G. (1988). School desegregation in the 1980's. Equity and Choice, 4 (February), 25-28.

ORFIELD, G. & MONFORT, F. (1986). Are American schools resegregating in the Reagan Era? A statistical analysis of segregation levels from 1980 to 1984. Working Paper, National School Desegregation Project, University of Chicago.

PEARCE, D. (1980). Breaking down barriers: New evidence on the impact of metropolitan school desegregation on housing pattern. Washington, D.C.: National Institute of Education.

ROSS, J.M. (1983). The effectiveness of alternative desegregation strategies: The issue of voluntary versus mandatory policies in Los Angeles. Boston: Boston University.

ROSS, J.M., GRATTON, B. & CLARKE, R. (1982). School desegregation and white flight reexamined: Is the issue different statistical models? Boston: Boston University.

ROSSELL, CHRISTINE H. (1978a). Assessing the unintended impacts of public policy: School desegregation and resegregation. Boston: Boston University, report to the National Institute of Education.

ROSSELL, CHRISTINE H. (1978b). School Desegregration on Community Integration. Journal of Education, 160 (May): 46-62.

ROSSELL, C.H. (1978c). White flight: Pros and cons. Social Policy, 9 (November/December), 46-51.

ROSSELL, C.H. (1979). Magnet schools as a desegregation tool: The importance of contextual factors in explaining their success. Urban Education, 14, 303-320.

ROSSELL, C.H. (1983). Applied social science research: What does it say about the effectiveness of school desegregation plans? Journal of Legal Studies, 12, 69-107.

ROSSELL, C.H. (1985). What is attractive about magnet schools? Urban Education, 20, 7-22.

ROSSELL, C.H. (1988). Is it the busing or the blacks? Urban Affairs Quarterly, 24 (September), forthcoming.

ROSSELL, C.H. & CLARK, R.C. (1987). The carrot or the stick in school desegregation policy? A report to the National Institute of Education, Washington, D.C.

ROSSELL, C.H. & HAWLEY, W.D.(Eds.)(1983). The Consequences of School Desegregation. Philadelphia: Temple University Press.

ROYSTER, E.C., BALTZELL, D.C. & SIMMONS, F.C. (1979). Study of the Emergency School Aid Act Magnet School Program. Cambridge, MA: Abt Associates.

SALAMON, L. (1979). The time dimension in policy evaluation: The case of the New Deal Land-Reform experiments. Public Policy, 27, 129-183.

SMYLIE, M.A. (1983). Reducing racial isolation in large school districts: The comparative effectiveness of mandatory and voluntary desegregation strategies. Urban Education, 17, 477-502.

TAEUBER, K. & TAEUBER, A. (1965). Negroes in Cities. Chicago: Aldine.

VAN VALEY, T.L., ROOF, W.C., & WILCOX, J.E. (1977). Trends in residential segregation: 1960-1970, American Journal of Sociology, 82, 827-844.

WELCH F. & LIGHT, A. (1987). New evidence on school desegregation. report prepared for the U.S. Commission on Civil Rights. Los Angeles: Unicon Research Corp.

WILSON, F.D. (1985). The impact of school desegregation programs on white public school enrollment, 1968-1976. Sociology of Education, 58, 137-153.